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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/417,161	10/12/1999	CHETT JUALL	024/1	7041

8791 7590 11/21/2003

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EXAMINER

TIEU, BINH KIEN

ART UNIT	PAPER NUMBER
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2643

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DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/417,161

Applicant(s)

JUALL, CHETT

Examiner

BINH K. TIEU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4 and 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Pat. #: 3,838,223) in view of Steward (U.S. Pat. #: 3,902,017) (both references cited in the previous Office Action) in view of Perry (U.S. Pat. #: 5,086,459).

Regarding claim 1, Lee et al. ("Lee") teaches a circuit (i.e., a circuit shown in figure 6) for determining the polarity of an on hook voltage between the tip and ring of a telephone, said circuit comprising:

a charge storage device (i.e., ringer capacitor 31) for storing charge for a first time period in response to a voltage presented across terminals of a telephone while said telephone is in the on hook state (col.6, lines 45-54); and

It should be noted that Lee fails to clearly teach a switch (i.e., transistor QA) for causing the charge storage device to periodically discharge for a second time period, the second time period being less than the first predetermined time period. However, Steward teaches a ringer guard circuitry operates from either tip-grounded or ring-grounded central office ringing signals comprising a transistor Q3 and a capacitor 129 shown in figure 3 operable as a switch for

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causing the charge storage device to periodically discharge for a second time period, the second time period being less than the first predetermined time period (col.8, lines 14-31 and col.10, lines 17-28) for a purpose of determining and receiving a central office ring signal regardless of polarity of the ringing signal.

Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to incorporate the use of the transistor Q3 as switch and capacitor 129 storage charge device for periodically discharging for a second time period, the second time period being less than the first predetermined time period, as taught by Steward, into view of Lee in order receive and determine the polarity of incoming ringing signals.

It should be also noticed that Lee and Steward, in combination, fails to clearly teach a latch for capturing a reversal of polarity of said voltage, as argued by Applicant in his remarks. However, Perry teaches a thyristor operable as a latching device for capturing a reversal of polarity of said voltage (col.8, lines 57-62) for a purpose of performing a line reversed voltage condition.

Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to incorporate the use of the thyristor, as a latching device, for capturing a reversal of polarity of said voltage, as taught by Perry, into view of Lee and Steward in order to accurately detect the polarity of voltage presented to an end user telephone equipment.

Regarding claim 2, Steward further teaches the charge and discharge times of capacitor 129 are 2 seconds and 180 milliseconds (col.8, lines 29-31). Steward further teaches that value of capacitor 110 in the circuit can be adjusted in order to control the RC time constant (col.5, line 59 – col.6, line 15) for a purpose of controlling the switch Q1. Therefore, it would have been obvious to modify the first predetermined time and second predetermined time period

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to be approximately 2.5ms and 2 microseconds, respectively into view of Steward and Lee in order to improve functions of the switch on polarity of incoming signal.

Regarding claim 4, Lee further teaches limitations in col.5, lines 23-27; col.6, lines 22-25; col.6, lines 53-60 and col.7, lines 3-10.

Regarding claims 6 and 9, Lee teaches a method and an apparatus (i.e., a circuit shown in figure 6) for determining the polarity changes in a voltage present across tip and ring terminals of a telephone network, said method and apparatus comprising steps and means of:

Repeatedly charging, for a predetermined first period, a charge storage device (i.e., ringer capacitor 31) with the voltage presented across the tip and ring interface (col.6, lines 45-54); and

Latching information (i.e., operations of flip-flop F/F) conveyed by the discharge in order to ascertain data conveyed by a change in polarity of the voltage presented across the tip and ring (col.5, lines 23-27; col.6, lines 22-25; col.6, lines 53-60 and col.7, lines 3-10).

It should be noted that Lee fails to clearly teach a switch (i.e., transistor QA) for causing the charge storage device to periodically discharge for a second time period. However, Steward teaches a ringer guard circuitry operates from either tip-grounded or ring-grounded central office ringing signals comprising a transistor Q3 and a capacitor 129 shown in figure 3 operable as a switch for causing the charge storage device to periodically discharge for a second time period, the second time period being less than the first predetermined time period (col.8, lines 14-31 and col.10, lines 17-28) for a purpose of determining and receiving a central office ring signal regardless of polarity of the ringing signal.

Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to incorporate the use of the transistor Q3 as switch and capacitor 129

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storage charge device for periodically discharging for a second time period, as taught by Steward, into view of Lee in order receive and determine the polarity of incoming ringing signals.

Regarding claim 7, Steward further teaches limitations of the claim in col.8, lines 27-30.

Regarding claims 8 and 11, Steward further teaches the charge and discharge times of capacitor 129 are 2 seconds and 180 milliseconds (col.8, lines 29-31). Steward further teaches that value of capacitor 110 in the circuit can be adjusted in order to control the RC time constant (col.5, line 59 – col.6, line 15) for a purpose of controlling the switch Q1. Therefore, it would have been obvious to modify the first predetermined time and second predetermined time period to be approximately 3 ms and 2 ms, respectively into view of Steward and Lee in order to improve functions of the switch on polarity of incoming signal.

Regarding claim 10, Steward further teaches the value of capacitor 110 is about 200 microfarads (col.8, lines 29-31). Steward further teaches that value of capacitor 110 in the circuit can be adjusted in order to control the RC time constant (col.5, line 59 – col.6, line 15) for a purpose of controlling the switch Q1. Therefore, it would have been obvious to modify the value of a capacitor to approximate 500 microfarads into view of Steward and Lee in order to improve RC time constant and current flow of the switch in response to polarity of incoming signal.

Regarding claim 12, Lee further teaches “T” and “R” terminals, shown in figure 4a, as tip and ring terminals of a telephone network.

Regarding claim 13, Steward further teaches zener diodes 71 and 107 as shown in figure 3 connected to between said tip and ring terminals 3T and 3R.

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Regarding claims 14-16, Lee further teaches limitations of the claim in figure 6.

3. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Pat. #: 3,838,223), Steward (U.S. Pat. #: 3,902,017) and Perry (U.S. Pat. #: 5,086,459) as applied to claim 1 above, and further in view of Reichelt (U.S. Pat. #: 5,247,573 also cited in the previous Office Action).

Regarding claims 3 and 5, Lee, Steward and Perry, in combination, teaches all subject matters as claimed above, except for said capacitor is used to generate a current through an optocoupler. However, Reichelt teaches such features in col.4, lines 32-39 and col.7, lines 28-41 for a purpose of producing a reversal of the reversing signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of a capacitor is used to generate a current through an optocoupler, as taught by Reichelt, into view of Lee, Steward and Perry in order to provide current to other elements such as flip-flops in the circuit.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh K. Tieu whose telephone number is (703) 305-3963 and E-mail address: BINH.TIEU@USPTO.GOV.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz, can be reached on (703) 305-4708 and **IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL Customer Service at (703) 306-0377 FOR THE SUBSTITUTIONS OR COPIES.**

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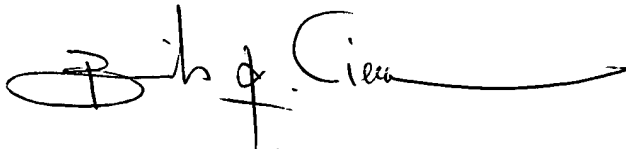
Any response to this action should be mailed to:

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Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist, tel. No. 703-305-4700).

A handwritten signature in black ink, appearing to read "Binh Tieu", with a long horizontal flourish extending to the right.

BINH TIEU
PRIMARY EXAMINER

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Date: November 14, 2003